

REMARKS / ARGUMENTS

Claims 1-31 are pending in the instant application. Claims 1, 18, 24 and 29 have been amended to further clarify the claim language. Claims 1, 18, 24 and 29 are independent claims. The Applicant submits that the claims 1-31 define patentable subject matter in view of the following remarks and arguments.

Claims 30-31 are rejected under 35 USC 112, second paragraph, as being allegedly indefinite to claim the subject matter in the invention. Specifically, the Examiner points out that claim 30 recites "coupling to an integrated chip to ..." as vague. The Applicant has amended claim 30 to clarify the language to recite "coupling said single PCI bridge to an integrated chip to ..." and submits that the amended claim 30 is definite. Claim 31 depends from claim 30, and therefore is submitted to be definite for the same rationale. The Applicant respectfully requests that the rejection to claims 30-31 be withdrawn.

Claims 1-4, 15-20 and 23 are rejected under 35 USC 102(e) as anticipated by Boucher et al. (US Patent. No. 6,226,680, hereinafter "Boucher").

Claims 10 and 11 are rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 1 above, and further in view of Kistler et al. (US Publication No. 2002/0198934, hereinafter "Kistler").

Claims 12-14 are rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 1 above, and further in view of Microsoft (Winsock Direct and Protocol Offload on SANs, 03/03/2001, hereinafter "Microsoft").

Claim 21 is rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 18 above, and further in view of Official Notice, hereinafter "ON").

Claim 22 is rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 18 above, and further in view of Yang et al. (US Publication No. 2002/0041566, hereinafter "Yang").

Claims 5-8 and 24-28 are rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 1 above, and further in view of Hayes et al (US Publication No. 2003/0046330, hereinafter "Hayes").

Claim 29-31 are rejected under 35 USC 103(a) as being unpatentable over Boucher, and further in view of Callaghan (NFS over RDMA, hereinafter "Callaghan").

I. RESPONSE TO EXAMINER'S ARGUMENTS

The Examiner, on page 2 of the 10/15/08 Final Office Action, disagrees with the Applicant's argument that Boucher does not disclose or suggest "a

processor operable to process a plurality of different types of network traffic,” as recited by the Applicant in claim 1. Specifically, the Examiner argues that the Applicant’s argument is vague in referring to Boucher’s fast path candidate traffic and slow path candidate traffic are of the same “**offload traffic**” traffic type. The Examiner relies for support on Boucher in Fig. 3, where step 61 (slow path determination) and step 65 (fast path determination) disclose that the packet headers (by matching whether the initial CCB in step 53, which is created by the same protocol in the host stack 44 in Fig. 4A) are used to identify the “**offload traffic**” packets as the slow path candidate, or as the fast path candidate.

The Applicant respectfully disagrees that Boucher’s same “**offload traffic**” packets are of different traffic types based on whether the packets include the “initial created CCB information” in the packet header to designate them as fast path or slow path candidates. Nevertheless, in order to further prosecution, the Applicant has amended claim 1 to read “wherein each of said plurality of different types of network traffic corresponds to a different network protocol”. In other words, the Applicant believes that the amendment contains language clarifies that each of the different network traffic types corresponds to a different type of network traffic protocol. In this regard, Boucher discloses that both the fast path candidate and slow path candidate utilizes the same protocol in the host stack 44 shown in Fig. 4A, therefore are of the same “**offload traffic**” type packets.

The Examiner further argues that different types of traffics are disclosed as the fast path traffic using TCP/IP, SPX/IPX and TTCP/IP protocols (see Boucher at col. 7, lines 37-42), and SMB over TCP/IP (see Boucher at col. 13, lines 43-58), where the non-fast path traffic are the Ethernet traffic, shown in Boucher's Fig. 9.

The Applicant respectfully disagrees and points out Boucher discloses that the above four different network traffic are received and processed by four separate hardware logic 250, 260, 262 and 264 (i.e., MACs) using four separate network connectors (not shown) on the INIC 200, not via a singular network connector coupled to the processor 230. In this regard, Boucher in Fig. 9 still does not disclose or suggest the Applicant's claim limitation of **"a processor coupled to the network connector ... to process a plurality of different types of network traffic, ... wherein each of said plurality of different types of network traffic corresponds to a different network protocol"** as recited in claim 1.

Independent claim 18 is similar in many respects to claim 1, and is therefore also submitted to be allowable. The Applicant respectfully requests that the rejection of independent claims 1 and 18 under 35 U.S.C. § 102(e) be withdrawn.

Claim 24 is not rendered obvious by the combination of Boucher and Hayes, since the combination fails to disclose or suggest at least the limitation of "handling a plurality of different types of network traffic via a single Ethernet

connector,” as recited in claim 24 by the Applicant. The Applicant respectfully requests that the rejection to claim 24 under 35 U.S.C. § 103(a) be withdrawn.

Likewise, claim 29 is not rendered obvious by the combination of Boucher and Callaghan, since the combination fails to disclose or suggest at least the limitation of “handling a plurality of different types of network traffic via a single PCI bridge,” as recited in claim 29 by the Applicant. The Applicant respectfully requests that the rejection to claim 29 under 35 U.S.C. § 103(a) be withdrawn.

II. REJECTION TO CLAIMS 30-31 UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 30-31 are rejected under 35 USC 112, second paragraph, as being allegedly indefinite to claim the subject matter in the invention. Specifically, the Examiner points out that claim 30 recites “coupling to an integrated chip to ...” as vague. The Applicant has amended claim 30 to clarify the language to recite “coupling said single PCI bridge to an integrated chip to ...” and submits that the amended claim 30 is definite. Claim 31 depends from claim 30, and therefore is submitted to be definite for the same rationale. The Applicant respectfully requests that the rejection to claims 30-31 be withdrawn.

III. REJECTION UNDER 35 U.S.C. § 102(e)

MPEP 2131 states:

“[a] claim is anticipated only if **each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” See MPEP at 2131 (internal citation omitted). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” See *id.* (internal citation omitted).

A. Boucher Does Not Anticipate Claim 1-4, 15-20 and 23

The Applicant turns to the rejection of claims 1-4, 15-20 and 23 under 35 U.S.C. § 102(e) as being anticipated by Boucher. Without conceding that Boucher qualifies as prior art under 35 U.S.C. 102(e), the Applicant respectfully traverses this rejection as follows.

A(1) Independent Claims 1 and 18

With regard to the rejection of independent claim 1 under 35 U.S.C. § 102(e), the Applicant submits that Boucher does not disclose or suggest at least the limitation of “**a processor coupled to the network connector, the processor operable to process a plurality of different types of network traffic, wherein each of said plurality of **different types of network traffic corresponds to a different network protocol**,” as recited in the Applicant’s claim 1.**

In the Office Action, the Examiner asserts Boucher discloses the following:

“a processor coupled to the network connector (fig. 13, microprocessor 470, col. 16 line 62-col. 17 line 13), the processor

being operable to process a plurality of different types of network traffic (abstract, col. 3 lines 35-67, col. 13 lines 24-35, the intelligent network interface card INIC's processor supports an offload traffic via fast path and regular IP traffic via a slow path)"

See the Office Action in pages 5-6. The Examiner relies for support citing the following:

"A network processor 230 determines, based on that summary and a comparison with any CCBs stored in the INIC 200, **whether to send a packet along a slow-path 231** for processing by the host. A large majority of packets can avoid such sequential processing and have their data portions sent by DMA along a fast-path 237 directly to the data destination 222 in the server according to a matching CCB."

See Boucher at col. 13, lines 24-30, and FIG. 9. The Examiner in the response to arguments section relies on Boucher's Fig. 9, col. 6 lines 39-55, alleging that Boucher's disclosure that a packet determined to be routed through a "fast path" for TCP/IP offload processing by the INIC processor, is a first type of network traffic, and that the packets that are routed to be handled through a regular host protocol stack, i.e. processed through all the network protocol layers, are a second network traffic type. In other words, **the Examiner alleges that the network traffic types are identified by the header information the packets are routed and processed.**

The Applicant respectfully disagrees and refers the Examiner to the amendment to the claim which clarifies that each of the different network traffic types correspond to a different network traffic protocol. In this regard, Boucher's

fast path candidate and slow path candidate are of the same “**offload traffic**” type packets, which are processed by the same protocol.

The Examiner is referred to the arguments in the Response to Examiner's Arguments in Section I above, that Boucher discloses **using a common slow path protocol in the host stack 44 to create the initial CCB for the header information of the subsequent fast path message processing**. In this regard, even though the “fast path” candidate and the “slow path” candidate packet headers differ in the “initial CCB information” and routed to separate paths, nevertheless, both are processed as “offload traffic” network traffic type, utilizing the same protocol stack 44 at different processing stages. In this regard, Boucher's “fast path” candidate and the “slow path” candidate packets are **not different traffic type and do not correspond to “a different network protocol,”** as stated in the Applicant's claims 1 and 18.

Furthermore, the Examiner at page 3 of the Final Office Action argues that different types of traffics are disclosed as the fast path traffic using TCP/IP, SPX/IPX and TTCP/IP protocols (see Boucher at col. 7, lines 37-42), and SMB over TCP/IP (see Boucher at col. 13, lines 43-58), where the non-fast path traffic are the Ethernet traffic, shown in Boucher's Fig. 9.

The Applicant respectfully disagrees and points out Boucher discloses that the above four different network traffic are received and processed by four separate hardware logic 250, 260, 262 and 264 (i.e., MACs) using four separate

network connectors (not shown) on the INIC 200, not via a single network connector coupled to the processor 230. In this regard, Boucher in Fig. 9 still does not disclose or suggest the Applicant's claim limitation of "**a processor coupled to the network connector ... to process a plurality of different types of network traffic, ... wherein each of said plurality of different types of network traffic corresponds to a different network protocol**" as recited in claim 1.

Likewise, independent claim 18 is similar in many respects to claim 1, and therefore is also submitted to be allowable. The Applicant respectfully requests that the rejection of independent claims 1 and 18 under 35 U.S.C. § 102(e) be withdrawn.

Furthermore, the Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of the independent claims 1 and 18 should such a need arise.

A(2) Dependent Claims 2-4, 15-20 and 23

Based on at least the foregoing, the Applicant believes the rejection of the independent claims 1 and 18 under 35 U.S.C. § 102(e) as being anticipated by Boucher has been overcome and should be withdrawn. The Applicant submits that claims 2-4, 15-20 and 23 depend directly or indirectly from the independent claims 1 and 18, and are, consequently, also respectfully submitted to be

allowable, and requests that the rejection under 35 U.S.C. § 102(e) be withdrawn.

In addition, regarding claim 3, the Applicant has reviewed the Examiner's citation in Boucher's abstract, col. 3, lines 35-67, and col. 13, lines 24-35, and points out that Boucher discloses only one type of Ethernet traffic, i.e. the offload traffic by fast path (via the INIC processor and DMA controller) or slow path (via the host protocol stack). **Boucher does not disclose other network traffic types, namely, the storage traffic, IPC, management traffic and RDMA traffic, as asserted by the Examiner.** Claim 3 is submitted to be allowable based at least on this rationale. Claim 19 is allowable for at least the same rationale as discussed with respect to claim 3.

In addition, regarding claim 15, the Applicant refers the Examiner to the same argument set forth above with respect to claim 1, that the fast path and the slow path traffic are not different network traffic types. Claim 15 is submitted to be allowable based at least on this rationale. Claims 17 and 23 is allowable for the same rationale discussed with respect to claim 1 and 18 respectively.

The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 2-4, 15-20 and 23 should such a need arise.

VI. REJECTION UNDER 35 U.S.C. § 103

In order for a *prima facie* case of obviousness to be established, the Manual of Patent Examining Procedure, Rev. 6, Sep. 2007 ("MPEP") states the following:

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

See the MPEP at § 2142, citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), and *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). Further, MPEP § 2143.01 states that "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art" (citing *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007)). Additionally, if a *prima facie* case of obviousness is not established, the Applicant is under no obligation to submit evidence of nonobviousness:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

See MPEP at § 2142.

A. The Proposed Combination of Boucher and Kistler, Does Not Render Claims 10 and 11 Unpatentable

Claims 10 and 11 are rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 1 above, and further in view of Kistler et al. (US Publication No. 2002/0198934, hereinafter "Kistler").

Based on at least the foregoing, the Applicant believes the rejection of the independent claims 1 and 18 under 35 U.S.C. § 102(e) as being anticipated by Boucher has been overcome and should be withdrawn. Kistler does not overcome Boucher's deficiency in disclosing the Applicant's limitation. The Applicant submits that claims 10-11 depend directly or indirectly from the independent claim 1, and are, consequently, also respectfully submitted to be allowable, and requests that the rejection under 35 U.S.C. § 103(a) be withdrawn.

B. The Proposed Combination of Boucher and Microsoft, Does Not Render Claims 12 - 14 Unpatentable

Claims 12-14 are rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 1 above, and further in view of Microsoft (Winsock Direct and Protocol Offload on SANs, 03/03/2001, hereinafter "Microsoft").

Based on at least the foregoing, the Applicant believes the rejection of the independent claims 1 and 18 under 35 U.S.C. § 102(e) as being anticipated by Boucher has been overcome and should be withdrawn. Microsoft does not overcome Boucher's deficiency in disclosing the Applicant's limitation. In addition, the Applicant submits that claims 12-14 depend directly or indirectly from the independent claim 1, and are, consequently, also respectfully submitted to be allowable, and requests that the rejection under 35 U.S.C. § 103(a) be withdrawn.

C. The Rejection of Claim 21 Under Office Notice

Claim 21 is rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 18 above, and further in view of Official Notice, hereinafter "ON"). The Applicant points out that the Examiner has cited Microsoft Computer Dictionary (fifth edition) to show **TDM to transmit segments of one signal or traffic**, which does not read on the Applicant's claimed limitation of

“employing time division multiplexing to determine which of the different types of network traffic access the software services via the single data path”. The Applicant submits that claim 21 is allowable.

In addition, based on at least the foregoing, the Applicant believes the rejection of the independent claims 1 and 18 under 35 U.S.C. § 102(e) as being anticipated by Boucher has been overcome and should be withdrawn. The Applicant submits that claim 21 depends directly or indirectly from independent claim 18, and is, consequently, also respectfully submitted to be allowable, and requests that the rejection under 35 U.S.C. § 103(a) be withdrawn.

D. The Proposed Combination of Boucher and Yang Does Not Render Claim 22 Unpatentable

Claim 22 is rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 18 above, and further in view of Yang et al. (US Publication No. 2002/0041566, hereinafter “Yang”).

Based on at least the foregoing, the Applicant believes the rejection of the independent claims 1 and 18 under 35 U.S.C. § 102(e) as being anticipated by Boucher has been overcome and should be withdrawn. Yang does not overcome Boucher’s deficiency in disclosing the Applicant’s limitation. In addition, The Applicant submits that claim 22 depends directly or indirectly from independent claim 18, and is, consequently, also respectfully submitted to be

allowable, and requests that the rejection under 35 U.S.C. § 103(a) be withdrawn.

E. The Proposed Combination of Boucher and Hayes Does Not Render Claims 5-8 and 24-28 Unpatentable

Claims 5-8 and 24-28 are rejected under 35 USC 103(a) as being unpatentable over Boucher, as applied to claim 1 above, and further in view of Hayes et al (US Publication No. 2003/0046330, hereinafter "Hayes").

Regarding the rejection of independent claim 24, the Applicant submits that the same rationale supporting the allowability of claim 1 is applicable, that the fast path and slow path packets handled by Boucher's MAC 402 are not different network traffic types. Hayes does not overcome Boucher's deficiency in disclosing the Applicant's limitation. Based on at least the foregoing, the Applicant believes the rejection of the independent claim 24 under 35 U.S.C. § 103(a) as being anticipated by Boucher in view of Hayes has been overcome and should be withdrawn. In addition, the Applicant submits that claims 5-8 and 25-28 depend directly or indirectly from the independent claims 1 and 24, and are, consequently, also respectfully submitted to be allowable, and requests that the rejection under 35 U.S.C. § 103(a) be withdrawn.

F. The Proposed Combination of Boucher and Callaghan Does Not Render Claims 29-31 Unpatentable

Claims 29-31 are rejected under 35 USC 103(a) as being unpatentable over Boucher, and further in view of Callaghan (NFS over RDMA, hereinafter "Callaghan").

Regarding the rejection of independent claim 29, the Applicant submits that the same rationale supporting the allowability of claim 1 is applicable, that the fast path and slow path packets handled by the PCI bridge 157 and INIC miniport driver 306 are not different network traffic type. Callaghan does not overcome Boucher's deficiency in disclosing the Applicant's limitation. Based on at least the foregoing, the Applicant believes the rejection of the independent claim 29 under 35 U.S.C. § 103(a) as being anticipated by Boucher in view of Callaghan has been overcome and should be withdrawn. In addition, the Applicant submits that claims 30-31 depend from the independent claim 29, and are, consequently, also respectfully submitted to be allowable, and requests that the rejection under 35 U.S.C. § 103(a) be withdrawn.

Furthermore, the Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of claims 5-14, 21-22 and 24-31 should such a need arise.

CONCLUSION

Based on at least the foregoing, the Applicant believes that all claims 1-31 are in condition for allowance. If the Examiner disagrees, the Applicant respectfully requests a telephone interview, and requests that the Examiner telephone the undersigned Patent Agent at (312) 775-8093.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

A Notice of Allowability is courteously solicited.

Respectfully submitted,

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